

What is claimed is:

1. An apparatus for providing air gaps for sinks comprising
a manifold pipe having a length and having a plurality of discrete openings along its
5 length, each of the openings facing the same direction transverse to the length,
a support bracket for the manifold pipe to suspend the manifold pipe substantially
horizontally under the sinks so that the openings align with sink drain tailpieces, and
an outlet at one end of the manifold pipe adapted to connect to a downstream flow
direction of sink effluent.
10
2. An apparatus as claimed in claim 1 wherein the manifold pipe is made up of a plurality
of sections including straight pipe sections and Tees, with the openings being openings in the
Tees.
- 15 3. An apparatus as claimed in claim 1 wherein the manifold pipe has a second end that is
closed.
4. An apparatus as claimed in claim 1 wherein the support bracket includes two supports
for axially spaced locations of the manifold pipe.
20
5. An apparatus as claimed in claim 1 wherein the support bracket is made of hanger
strap.
6. An apparatus as claimed in claim 1 wherein the manifold pipe is about three inches in
25 diameter and has an eccentric reducer at the outlet to a diameter of about two inches, the

eccentric providing a lower peripheral wall of the two inch diameter to be aligned with a lower peripheral wall of the manifold pipe opposite the openings.

7. An apparatus as claimed in claim 1 wherein the manifold pipe has first diameter and
5 has an eccentric reducer at the outlet to a reduced diameter, the eccentric providing a lower peripheral wall of the reduced diameter to be aligned with a lower peripheral wall of the manifold pipe opposite the openings.

8. An apparatus as claimed in claim 1 further comprising a drain flow control adapted to
10 be installed on a sink drain tailpiece to collimate effluent flow from the tailpiece to direct the effluent flow to an opening in the manifold pipe aligned below the tailpiece.

9. An apparatus as claimed in claim 8 wherein the drain flow control comprises a unitary elastomeric item configured with a circumferential band and a transverse disk at one edge of
15 the band, the disk having a hole in it so that the effluent can pass through the hole when the control is mounted on the tailpiece.

10. An apparatus as claimed in claim 9 wherein the disk is axially distendable in response to an expected flow pressure, so as to take on a truncated conical configuration when
20 distended.

11. An apparatus as claimed in claim 9 further comprising a band or clamp outside of the circumferential band to secure the flow control to the tailpiece.

12. An apparatus as claimed in claim 1 further comprising an oil/grease separator downstream of the outlet.

13. An apparatus for providing air gaps for sinks comprising

5 a manifold pipe having a length and made up of a plurality of sections including straight pipe sections and Tees having openings, to form a plurality of discrete openings along the length, each of the openings facing the same direction transverse to the length,

two support brackets for axially spaced locations of the manifold pipe to suspend the manifold pipe substantially horizontally under the sinks so that the openings align with sink

10 drain tailpieces, and

the manifold pipe having a first diameter and an eccentric reducer at the one end to a reduced diameter, the eccentric reducer providing a lower peripheral wall of the reduced diameter aligned with a lower peripheral wall of the manifold pipe opposite the openings and adapted to connect to a downstream flow direction of sink effluent.

15

14. An apparatus as claimed in claim 13 wherein the support bracket is made of hanger strap.

15. An apparatus as claimed in claim 13 further comprising a drain flow control adapted
20 to be installed on a sink drain tailpiece to collimate effluent flow from the tailpiece to direct the effluent flow to an opening in the manifold pipe aligned below the tailpiece, wherein the drain flow control comprises a unitary elastomeric item configured with a circumferential band and a transverse disk at one edge of the band, the disk having a hole in it so that the effluent can pass through the hole when the control is mounted on the tailpiece and being

axially distendable in response to an expected flow, so as to take on a truncated conical configuration when distended, and

a band or clamp outside of the circumferential band to secure the flow control to the tailpiece.

5

16. An apparatus as claimed in claim 13 further comprising an oil/grease separator downstream of the eccentric reducer.

17. A drain flow control adapted to be installed on a pipe to collimate effluent flow from the pipe to direct the effluent flow comprising

10

a one-piece elastomeric item configured with a circumferential band and a transverse disk at one edge of the band, the disk having a hole in it so that the effluent can pass through the hole when the control is mounted to the pipe and being axially distendable in response to an expected flow, so as to take on a truncated conical configuration when distended.

15

18. A control as claimed in claim 17 wherein the disk has a reinforcing thickness surrounding the hole.

19. A control as claimed in claim 17 wherein the circumferential band has an integral inner ridge to engage the band to a pipe inserted in the band.

20

20. A control as claimed in claim 17 wherein the control has a durometer of 45 +/- 5.

21. A control as claimed in claim 17 wherein the control is made of Buna N rubber and has a durometer of 45 +/- 5.

25

22. A drain flow control adapted to be installed on a pipe to collimate effluent flow from the pipe to direct the effluent flow comprising
- 5 a one-piece elastomeric item of Buna N rubber and having a durometer of 45 +/- 5 configured with
- a circumferential band having an integral inner ridge to engage the band to a pipe inserted in the band, and
- a transverse disk at one edge of the band, the disk having a hole in it so that the effluent can pass through the hole when pipe is inserted in the band and being axially
- 10 distendable in response to an expected flow so as to take on a truncated conical configuration when distended and the disk having a reinforcing thickness surrounding the hole.
23. A kitchen sink installation comprising
- a plurality of adjacent kitchen sinks, each sink having a drain tailpiece,
- 15 a manifold pipe mounted substantially horizontally under the sinks and having a length,
- a plurality of discrete openings along its length, each of the openings facing upward in alignment with and spaced by an air gap from one of the sink drain tailpieces, and
- an outlet at one end of the manifold pipe adapted to connect to a downstream flow
- 20 direction of sink effluent.
24. A kitchen sink installation as claimed in claim 23 further comprising drain flow controls installed on the sink drain tailpieces to collimate effluent flow from the tailpieces, the drain flow controls each including a distendable disk extending transverse to a flow
- 25 direction, the disk having a hole in it so that the effluent can pass through the hole as the disk

distends in response to the flow, so as to take on a truncated conical configuration when distended and collimate the flow toward an aligned opening in the manifold pipe.

25. A method of draining kitchen sinks comprising

5 holding a volume of water in at least one of a plurality of adjacent kitchen sinks,
draining the water from a drain at the bottom of the sink through a collimating drain
flow control,

exposing the collimated drained water to an air gap,

collecting the drained water in an opening in a manifold pipe under the sink, and

10 directing the drained water downstream of the manifold pipe.

26. A method as claimed in claim 25 wherein draining includes passing the water through
a hole in a distendable disk that extends transverse to a flow direction, and distending the
disk, so the disk takes on a truncated conical configuration to collimate the flow.

15

27. A method as claimed in claim 26 wherein rod-like solids in the drained water orient
toward the flow direction at the conically configured disk.